

COST and MANAGEMENT

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• EDITORIAL •

Parliament and Business

One could not read the recent debates in the House of Commons at Ottawa, concerning the Bren Gun contracts without the feeling that the majority of the members of that House are more concerned with "getting the better" of their opponents rather than in conducting the real business of the nation. No person will quarrel with an opposition that endeavours to prevent anything of a "phoney" nature from being perpetrated on the Canadian people, but in this case it is obvious that the chief concern of the opposition to "hang something" on the government, and on the government side to pose as the saviours of the nation.

Nor did the third party in the House escape and, generally, one had the more or less disgusting spectacle of "fiddling while the country burns."

Surely, with our unemployment problem, or railway problem and our taxation problems generally, there are many things to take up the time of the members; matters which are of considerable more urgency than the Bren Gun contracts. It is becoming more and more apparent that no effort at all is being made to solve our railway problem, our unemployment problem and the problem of increasing taxation by any party. Why?

Are those entrusted with the business of the nation afraid to tackle these problems from a fundamental point of view, or is it a case of not knowing how? One is inclined to think that, generally speaking, the members at Ottawa are distinctly out of tune with public opinion, for the "man in the street" is becoming more and more disgusted with the efforts, or lack of efforts, of our Dominion Parliament to solve the many difficulties which confront us. If it were simply one party, the answer would be simple, but all parties are to blame, and so the answer is not so easy.

As this writer sees it, the Canadian people are now in no mood to brook any further delay in a concrete attempt to solve our many difficulties, and no party can escape its just share of the blame for the dilly-dallying which undoubtedly is to be seen on all sides at Ottawa.

There may be a principle involved in the matter of Bren contracts; it may be that government arsenals should have received these contracts . . . but surely there are more urgent matters confronting our government and parliament generally . . . surely our unemployment problem, our youth problem, our railway problem and our taxation problem deserve much more from those we elected to represent us in Parliament than these matters have received so far. Public money is being wasted on unseemly scraps and efforts to "get" each other instead of carrying on with the business of the nation, the business these members were elected to transact.

ACROSS THE SECRETARY'S DESK

Across the Secretary's Desk

I received a letter from Ed. Charnock a week or two ago. Ed. is the very efficient and popular chairman of the Fort William-Port Arthur Chapter. There is not anything new in receiving a letter from Ed., but the tone of the letter was one to be remembered, and it certainly gave me real inspiration. Ed. talked of the previous meeting, conditions in the Chapter, and then went on to give me information concerning the January and February meetings.

Said he: "Why don't you come up for this January meeting, and we'll show you what a meeting can be like, even if we are out of sight of Toronto."

Turning to the February meeting, at which Stew Willis of Winnipeg will be the guest speaker and will have motion pictures to illustrate his talk. Ed. said: "Why not come up for this meeting also, and we'll make it banquet night."

The members are turning out for the meetings and enjoying them which should be good news for everyone; certainly it is for me.

At present there are twenty-two members in this Chapter, and the probability is that this number will be increased to thirty in the very near future.

Unfortunately, I was compelled to miss the January meeting of the Toronto Chapter, owing to the fact that I was in Windsor. Windsor, of course, is the scene of our newest Chapter, organized on December 1st, and if the inaugural meeting was a success, this second meeting was a pronounced success.

J. P. "Jim" Masterson, a former Montreal Chapter chairman, now located in the Windsor district, was the guest speaker, and he made his talk very human. Thirty-one were present for dinner, and forty-five for the meeting, and everyone present seemed to be well pleased with what they saw and heard, especially if the number of applications for membership forms is any criterion. The manner in which this new Chapter is being received in Windsor makes one wonder why we didn't organize there before.

Certainly the members and others who were present seemed to be very enthusiastic. Following the meeting, the directors elected at the previous meeting met and elected officers for the balance of the season.

One thing that impressed me particularly at this meeting was the manner in which everyone present stood up and gave his name, with emphasis on the christian name, or nickname in some cases, and the firm he represented.

Alex Howey and I went up to London for that Chapter's January meeting, and although the attendance was small, due to end of the year work largely, those who did attend were well rewarded, for Alex gave a very fine, informative talk on "Budgetary Control." It was almost 2 o'clock next morning when we arrived home from this meeting, but we both enjoyed it very much.

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At long last, the Frank Fernie Trophy, awarded annually to the Chapter showing the greatest percentage of increase in membership, has been located. Jack Carter, the Montreal secretary, finally sent it along and it will be presented to the Hamilton Chapter at its next meeting. Hamilton won it last year, but will have to get a move on if they are to keep it for another year.

Coming back to the Windsor Chapter meeting, Kent Devers and Jerry Long of the Detroit Chapter, N.A.C.A., were very welcome guests. Kent is the secretary of the Detroit Chapter, and both seemed to enjoy the meeting very much.

I was in London on the date of the last Kitchener meeting, and in case Gordon Good, Herb Huber and the rest of the boys there think I am neglecting them, I'll be there for the next meeting. Unfortunately, also, I could not attend the last Niagara Peninsula meeting, owing to the fact that I had a severe cold and the roads were very bad, but Harvey Spry and his colleagues are doing such a grand job down there that I wouldn't be missed anyway.

I had expected some criticism, either good or bad, concerning the January issue of Cost and Management, and did receive some, but not so much as expected, and if any of you fellows have anything to say let me hear from you.

While in Windsor I had the pleasure of meeting Walter Lane, who was the Dominion vice-president last year. Walter stayed at the same hotel, and we had a short but very enjoyable chat about Society affairs. He was quite pleased at the way matters were progressing with our Society.

Bill Dunbar, secretary of the Winnipeg Chapter, has been under the weather, and who hasn't recently, but is back at his desk again and reports a very fine January meeting with about forty turning out for a luncheon meeting, which was really excellent.

By the way, I didn't hear anything about ambulances or taxi's in connection with the recent Montreal smoker, so the boys must have been on their best behaviour. Certainly they turned out for this affair, about one hundred and fifty being present, which is quite a crowd.

Cheerio for this month . . . but I would like to hear from more of you.

R. D.

Chapter Notes

Montreal.

The annual smoker of the Montreal Chapter, always a real feature of Chapter activities, was this year attended better than ever, for upwards of 150 members and guests attended. The entertainment was both varied and instructive, and included a most vivid demonstration of the art of ju-jitsu and a juggler of unusual ability. The arrangements were under the very capable direction of Mr. D. J. Peddie and were very efficiently managed. Everything proceeded with a hitch, and when the National

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Anthem was played, at approximately 10.30 p.m., all present voted the evening a huge success and one which assisted materially in promoting the friendliness of the members.

The second meeting in January was also a huge success, for on January 16th Mr. E. E. Webster addressed the members on the subject "The Credit Executive, His Work and Philosophy." Mr. Webster excelled himself in presenting this talk, which was very well received, and arrangements have been made to publish same in the March issue of "Cost and Management."

The next meeting will be held on February 10th, when the guest speaker will be Henry Clay, M.A., M.Com., Hon. D.Sc., of University College, Oxford. Economic advisor to the Bank of England, Mr. Clay will speak on "The Limits of Parliamentary Government."

Toronto.

The January meeting of the Toronto Chapter was a pronounced success, even if the attendance was not up to standard. This being the annual visit of the Hamilton Chapter, the meeting was held at the Round Room, Eaton's College street store, but unfortunately the coldest night of the winter, with slippery roads, kept down the attendance. However, twenty-three journeyed from Hamilton and fifty Toronto members attended and apparently had a most enjoyable time. The speaker was Mr. M. W. Waddington, C.A., of Consumers' Gas Co., Toronto, and he spoke on the "Romance and Potentialities of the American Gas Industry." His talk was very instructive but, owing to the fact that the room had to be relinquished at the close of the talk, there was no discussion, which was to be regretted as several of the members had some very pertinent questions to ask. Prior to the meeting there was some very fine entertainment and the boys regaled themselves with refreshments.

Hamilton.

For the first February meeting, the Hamilton Chapter tried something new, in the form of a discussion meeting, and it turned out to be so good that the members demand many other meetings of a similar nature.

Forty turned out for dinner and nearly sixty for the meeting. Messrs. W. H. Furneaux, K. M. Horton and W. L. McMahon read short papers on "The Remuneration of Direct Labour," "Distribution of Maintenance Costs" and "Allocation of Overhead," with fifteen-minute discussion periods following each paper. The fun waxed fast and furious, and it is safe to say that in no previous meeting have the members enjoyed better discussions or received more information. Prior to the meeting there was some enjoyable entertainment, smokes and refreshments served, and Vice-President A. G. Howey presented to last year's chairman, Bill Smitton, the Frank Fernie Shield, awarded for the greatest percentage of increased membership. Charlie Wynn capably looked after the entertainment.

Niagara.

The January meeting of the Niagara Chapter, despite a relatively small attendance, was a pronounced success. Twenty-five attended at the Welland Club to hear Messrs. J. Clark Ryan and Bert Pratt of the Colonial Radio Corporation, Buffalo, give a most excellent talk on "Micro Motion

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Analysis," and the talk was very well received and a real lively discussion followed.

The February meeting will be held at St. Catharines, on the 22nd, and will bring the Hamilton members down in full force. On this occasion Mr. C. Oliver Wellington of McKinsey, Wellington & Co., New York City and Boston, will be the guest speaker and his subject, "The Responsibility of the Accountant to Management," is one well worth hearing. Mr. Wellington is considered one of the foremost accountants in the United States and is known as a brilliant speaker. It is to be hoped that both the Niagara and Hamilton members will turn out in full force for this meeting.

Kitchener.

Mr. W. S. Ferguson, C.A., of the Shaw Schools and the University of Toronto, was the speaker at the January meeting of the Kitchener Chapter, but unfortunately here again bad weather conditions, coupled with the end of the year work, kept the attendance down to a minimum. However, those who did attend were well rewarded, for not only did Mr. Ferguson give a most excellent talk on "Wage Incentives," but the discussion at the close was very much worth while. Those who did not attend missed a real talk and a real discussion.

For the February meeting, on the 16th, a surprise is in store for the members, and they are advised not to miss it.

London.

London Chapter members failed to turn out in force for the January meeting, when Mr. A. G. Howey, vice-president of the Society, spoke on "Budgetary Control." Mr. Howey dealt with his subject in a very practical manner, and a lively discussion followed, the subject evidently being of considerable interest to the majority of those present.

The February meeting will bring as guest speaker Mr. J. P. Masterson, C.G.A., of Walkerville. Mr. Masterson, who is a past chairman of the Montreal Chapter, will speak on the "Installation and Control of Plant Ledgers," and members are advised not to miss this meeting, which will be held at the Y.M.C.A. on February 16th.

Windsor.

The January meeting of the Windsor Chapter was a real success, there being a fine attendance both for the dinner and the meeting at the Norton Palmer hotel. The speaker was Mr. J. P. Masterson, C.G.A., of Walkerville, and former chairman of the Montreal Chapter. He spoke on the "Installation and Control of Plant Ledgers," and the discussion which followed testified to the real interest shown in the talk.

For the February meeting Mr. R. W. Peden of Detroit will be the guest speaker, and another bumper attendance is looked for.

The officers of the Windsor Chapter are: Chairman, E. R. Hutchinson, Walker Metal Products; Vice-Chairman, R. G. Millen, Auto Specialties Mfg. Co., Walkerville; Secretary-Treasurer, J. T. N. Wigle, C.A., of A. S. Fitzgerald & Co., Windsor. Directors—W. Orth, Electric Autolite Co.,

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Ltd., Sarnia; G. F. Luttrell, Ford Motor Co., Ltd., Windsor; H. C. Cox, C.A., Hiram Walker & Sons Ltd., Walkerville.

At the next meeting Mr. Peden will speak on "The Calculation of Standard Costs." Mr. Peden, who a native Canadian, is a well known speaker, is Vice-Chairman of the Detroit Chapter, N.A.C.A., and is at present engaged in professional industrial engineering and Cost Consulting work in Detroit and vicinity.

Winnipeg.

The January meeting of the Winnipeg Chapter was in the nature of an experiment for, instead of an evening meeting, it was found necessary to hold a luncheon meeting to accommodate the speaker, Mr. V. C. Nauman, Assistant Commissioner of Excise at Ottawa. Mr. Nauman spoke on "Sales Tax," and around forty members and guests were present, truly a notable gathering for the first luncheon meeting. Mr. Nauman gave a clear-cut talk and many questions were asked at the close, thus rounding out a most informative and enjoyable meeting.

Fort William-Port Arthur.

The January meeting of this Chapter, held at the Prince Arthur hotel, Port Arthur, was quite successful, with almost a full complement of members present. The guest speaker was Mr. F. H. Black, F.C.A., of Port Arthur, who addressed the members on "Income Tax Accounting." Mr. Black explained how accounting can facilitate the preparation of income tax returns, and his address was very much enjoyed.

The next meeting will be held on February 20th, at the Prince Arthur hotel, Port Arthur, and will be addressed by Mr. S. W. Willis of the International Business Machines Co. Ltd., of Winnipeg. Mr. Willis will speak on "Electric Tabulating Machines and Their Application to Office Work." The talk will be illustrated by moving pictures, and the members have also been invited to visit the offices of the Canadian Car & Foundry Co. to inspect machines actually in use in cost work. It looks like a very fine time for the members, who are urged to turn out in full force.

Reference Literature Received

Piece Work Rates in Time and Money.

Business Management. January.

Another short but very informative article on a subject of interest to Cost Accountants and to Management, by R. B. Taylor, C.A.

Whither Cost Accounting.

Accountancy. January.

A short but timely article which should provoke plenty of criticism.

The Cost of Packaging.

The Accountant. Dec. 31st, 1938.

A short article which deals with a subject often forgotten. Cost

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Accountants are very prone to forget such a cost, but this article shows that such a cost is a very important one in many industries.

Installing a Cost System.

The Accountant. January 7th, 1939.

This is the first of a series of articles on a subject of special interest, by F. Bradshaw Makin, F.C.I.S.

Installing a Cost System—Part II.

The Accountant. January 14th, 1939.

The second installment of a fine series of articles referred to above.

Costs and Statistics—Their Scope and Function.

Accountants' Magazine. January.

A very complete article, illustrating the real function of costs and statistics, and one very well worth studying.

The Meaning Behind the Figures.

The Australian Accountant. December.

A fine article, by that well known contributor, Mr. A. A. Fitzgerald. Mr. Fitzgerald discusses the real meaning of figures, and this article is one which should be of interest to all Accountants.

The Australian Monetary and Banking System.

The Australian Accountant. December.

In view of the publicity given to this subject by the recent visit to Australia by the Ontario Prime Minister, this subject is one of real interest.

The Audit of Mechanized Accounts.

The Australian Accountant. December.

A very interesting article, of interest to all those engaged in the auditing field.

Factors In Factory Production.

The Australian Accountant. December.

Discusses such matters as plant layout, the need for efficient planning and the necessity for the simplification and standardization of products, parts, tools and equipment, and also emphasizes the need for accurate forecasting.

The Recognition of the Elements of Cost in Municipal Accounts.

The Cost Accountant. December.

A really fine article of interest generally to those engaged in municipal work.

Cost Accounting in the Plastic Moulding Industry.

N. A. C. A. January 1st.

A case study which illustrates the benefits of a cost system in a small rather than a large industry, the procedure to be followed in setting up rates and standards in a new company without benefit of historical background, and indicates the value of a cost accounting system in order to bring to light favourable or unfavourable trends. A splendid article, by Mr. R. W. Peden.

Disposition of Variances from Standard.

N. A. C. A. January 1st.

Another fine article dealing with a very controversial subject, and one which is much to the fore at this time.

FORUM SECTION

An Approach to Accounting Problems.

N. A. C. A. January 15th.

Deals with accounting problems in the field of depreciation and inventory valuation, particularly as they apply under the Securities and Exchange Commission.

Uniform Cost Accounting Principles in Sweden.

N. A. C. A. January 15th.

An article of real interest to all Cost Accountants. Very comprehensive and is undoubtedly the product of much thought and time.

Practical Aspects of Depreciation on a Unit of Production Basis.

N. A. C. A. February 1st.

Thoughts on Depreciation.

N. A. C. A. February 1st.

Depreciation for a Plant Using Composite Rates.

N. A. C. A. February 1st.

Here are three very fine articles on different phases of depreciation, and Cost Accountants and Accountants generally would do well to study all three.

Cost Accounting in the Chemical Industry.

Cost Accountant. January.

A case study which is really interesting, not alone to those engaged in this industry.

Factory Costing.

Cost Accountant. January.

Really the outline of a cost system in operation at the Southern Railway Company's works at Redbridge, England. Very interesting and informative.

Accounting Principles and Cost Accounting.

Journal of Accountancy. February.

A most interesting review of the "Statement of Accounting Principles," by Professors Sander, Hatfield and Moore.

FORUM SECTION

Dear Sir:

There is a question about "Variation" in January issue on which I might give my opinion, based on past experience.

The question being put in a general way, my answer will also be along general lines, because this is a case where each variation account of material, labor and overhead must be analyzed individually when there is more than one material used, and more than one manufacturing department.

The material and labor variations are transferred to Profit and Loss after a certain part applying to the existing inventories has been reserved.

The overhead variation, if all due to operating over or under normal capacity, is closed to Profit and Loss. Should the standard rate of overhead be over the normal overhead rate on a normal production, there again a reserve must be set for that part of a gain which applies to the existing inventories.

Yours truly, COMPANY A-C.

The Statistical Control of Business Activities

By PROFESSOR PHILIP H. HENSEL

University of Western Ontario, London, Ontario

An Address Before London Chapter, November 17th, 1938

In any well managed business there is and must be, consciously or unconsciously, a very great dependence upon statistics. Facts are essential in business. Complete information does not guarantee success in a given undertaking; but a business man who provides himself with a sound understanding of a situation before outlining his course of action has provided a foundation upon which his analytical and intuitive powers can build to his own best advantage. Every intelligent business man strives to possess a wide range of knowledge, to interpret it skilfully and to present it convincingly to others.

Economic life at the present time is complex. Channels of distribution, stretching from raw material producers to ultimate consumer, are long and tortuous.

Agriculture with its many subdivisions is intricately connected with the far-reaching branches of industry. Strife and disturbances in what were once remote and foreign lands unavoidably produce repercussions in our own economic life. There is much to be known and understood now that it is a full-time job to keep abreast of the times. The modern method of integrating the various parts of this gigantic puzzle into a simple and understandable whole makes use of quantitative measures, of number relations, called statistics. Books of account, payrolls, stock records, sales records, production schedules, cost records, purchasing schedules, and innumerable other entries and summaries of current and prospective operations are nothing more or less than the statistics of the business. In some special enterprises, notably those concerned with the various forms of insurance, and to a considerable extent in banking, the statistical element predominates. Furthermore, there is rarely even a minor executive in any business who does not, knowingly or otherwise, base his decisions very largely upon the statistics of his operations.

Business Conditions and Prospects.

How is business? That is the question that most business men are concerned with, for on its answer depends whether they will raise or lower prices, increase or decrease production, purchase far ahead or only for current needs, expand or liquidate stocks, buy or sell equipment, increase or decrease advertising, as well as many other policies of prime importance in the conduct of their business. The very recurrence of this question in the office or in the factory, at lunch or at the club, on the train or on the street corner, testifies to its importance in the conduct of every business as well as to the difficulty of securing a correct answer.

Until recently the average business man, in his quest for information

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as to the trend of conditions, sought out other business men in order to check up on his own opinions and the showing of his company, for he realized that the figures of his own company were not necessarily representative of general business trends, but that his company would be vitally affected by these trends. But even a few opinions from outsiders did not solve the problem; they were formed in just the same manner and subject to the same limitation, and besides, they were often contradictory.

The business world now has a means for providing an answer to this question so that the executive may obtain the precise facts instead of relying on mere opinions. The solution was found in the collection and compilation of actual current facts, weekly, monthly, occasionally even daily, from representative concerns in each important industry or trade, to form a complete picture of the business situation therein. With these statistics covering the principal industries at his command, the business executive of to-day can answer the question in a simple yet correct way.

Statistics by themselves, however, cannot effect any magic transformation of business. The errors made by business forecasting services in the past in predicting the trend of future events shows that statistics cannot of themselves lead to 100 per cent. accuracy. But the trouble is not so much with the statistics as with the use made of them. Statistics are not the whole cure of business ills or the whole force of business progress any more than the compass can make the ship sail. But the information which the compass gives of the ship's course is vital to the proper navigation and, similarly, statistical information on the course of business is becoming more and more vital to the proper steering of the course of each industry.

Business Forecasting.

What is business forecasting? Business forecast is the estimation of reasonable future probabilities, based upon all the facts that are known to-day, upon the principles evolved from yesterday's experience, and upon the assumption that, in varying degree, these principles will be valid in the future as they have been valid in the past.

The method followed may best be described as that of economic analysis. The simplest way to explain it is to say that it is the method of common sense reasoning based upon facts, experience, deduction and inferences, and leading therefrom to what appear to be reasonable conjectures of future probabilities.

Probably no requirement is more definitely imposed upon the present-day business executive than that of ability to analyze business operations in relation to the business cycle. Such analyses have a fundamental bearing on the operating budget, and are also of primary importance in connection with the determination of financial, purchasing and sales policies, and in the handling of labour and personnel matters.

In the vast majority of businesses very useful forecasts of future activity may be made by the simple and statistically crude method of plotting a curve of past performance for as many years as possible, in comparison with a curve representing general business activity, and then carrying both curves forward, keeping in mind the probable development of the current business cycle and the relations between the two curves that

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have obtained in previous cycles. In making this analysis and forecast it is important to deal in physical quantities of production, sales, and so forth, rather than in dollars of value, in order to avoid confusing real changes with those due to mere price fluctuation. It is, of course, also necessary to have at hand a trustworthy chart of general business activity covering a long period, which can be kept up to date by monthly additions.

Probably one of the greatest aids to business men is the Monthly Review of Business Statistics, published by the Dominion Bureau of Statistics. In this review all the important business series are tabulated. There is little attempt made at interpretation however, the chief purpose of the publication being to place the materials required for interpretation readily at the disposal of the business public.

The development of business forecasts for any organization may indicate profitable opportunity for many refinements in statistical technique. Corrections for seasonal variations and long term trends, and for the tendency for changes in any particular business to occur before or after changes in general business, are especially important. Some business activities move with pig iron production, new building, and so forth, rather than with general business. Others tend to increase rather than decrease during periods of general depression. Certain businesses are concerned mainly with domestic conditions while others are vitally affected by the status of foreign trade. Here, again, there is a chance for co-operation between the executives in selecting, on the basis of practical knowledge, those outside activities with which a particular business is most intimately affiliated.

Market and Price Analyses.

Closely related to forecasts of the activity of the business as a whole are those special studies which deal with marketing possibilities and probable price trends. "Firm's Share of Market," one of the difficult problems in market analysis is that of determining whether or not a given firm is maintaining its standing in relation to competitors. In some cases there are public or trade association statistics which gives sales or output for all, or a large percentage of, the concerns in a given line, but in the majority of instances it is necessary to undertake special investigations. These investigations will, of course, vary in type with the nature of the business. The fundamental principle is, however, almost always that of determining, for different provinces or other convenient areas, the ratio of total competing business to the business of the investigating concern. (If, for example, the product is tooth paste, even very scattered inquiries, made by salesmen of druggists and other retailers, will soon establish such ratios with a fair degree of accuracy. For other products or services it may be necessary to make inquiries through other channels of distribution, but persistent work, supplemented by an intelligent weighing of the returns, will furnish the required information in almost every instance.)

With the preceding local ratios once determined, it is a simple matter to compute, from the known sales of the investigating concern, what the approximate total sales are in each area. Such rough totals may next be compared with population, income figures, property values, banking

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resources, public expenditures, percentages of children of school age attending collegiate, technical or continuation schools, and other general indices, or determine to which of such factors, or to what composite of them, the natural demand is most closely related. The finished studies then become a guide to the formulation of sales and advertising policies.

Determining Inventory Requirements:

Price studies and forecasts are of particular importance to concerns that must carry large inventories, or that regularly manufacture in large quantities for stock. The basic principle which underlies such studies is that of the tendency toward a long-term continuity in price relations, subject only to those gradual drifts which arise out of the exhaustion of raw materials, and, occasionally, out of changes in the relative cost of skilled and unskilled labour. This tendency may, of course, be obscured or interrupted by changes in processes, by the development of important substitute commodities, and so forth. Radical increases in supply, as in the case of plantation rubber, may also break the line of continuity for special commodities. But with allowance made for these special cases and special factors, it is still possible to draw normal price curves, properly related to the general price level, for the great majority of all common articles of commerce.

With such normal price lines once drawn, the price study next concerns itself with seeking the explanation for past variations from "normal," in known conditions as to stocks on hand, production, demand, and so forth. The final operation, of course, is that of projecting the price trend into the future. Here, however, there is need for caution.

Revising Estimates Periodically.

These estimates should be revised and extended at appropriate intervals, and monthly comparisons should be made between actual results and the budget figures for all important items. Such monthly comparisons should also carry explanations of important variations from the original estimates. In case these variations accumulate to a degree that impairs the usefulness of the budget in the control of operations, there should be no hesitation in revising the estimates at a mid-year period, and such a revision will be especially necessary in the event of any sudden and unexpected change in business conditions. Under ordinary circumstances, however, it is a better procedure to maintain the original estimates as the basis for comparisons throughout the year, and to supplement them by means of departmental and other estimates indicating results actually expected during the balance of the year. As so set up, the budget will show, for each important item and in totals, the original estimates, the actual results to date, and the expected results during each of the remaining months of the year. For most effective use, these figures should be given in cumulative form as well as in detail by months.

Importance of Budget.

In the actual compilation of the budget and in the preparation of monthly statements, the chief accounting officer of the organization must necessarily assume primary responsibility. Nevertheless, there can be no more serious mistake than to assume that the budget should be handled

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as a mere matter of accounting detail. The purpose of the budget is to increase profits and reduce losses. It can only do this if it assists the whole organization in maintaining a uniform company policy. Production, sales, and purchases must be in accord. Prices must not get out of line with costs. Profits, new financing, and new construction must be in balance. Caution and courage must go hand in hand with foresight in the whole programme.

To secure these results, each department and each important unit in the organization must have an active part in the preliminary conferences and discussions—and back of all must be a careful setting forth of all the facts and trends that many contribute to a sound final decision. It is particularly important to have a thorough statistical check on all items into which an element of personal bias may enter. Only when these steps have been taken and when each responsible executive knows in general terms not only what he is to do, but why, is it possible to reduce the budget to final form.

Labour or Wage Studies.

The business executive will, in most cases, be interested in statistics dealing with labour performance and reflecting other factors than money costs. The following items may be considered:

- Output in units per labour hour,
- Output in units per labour dollar,
- The ratio of direct to indirect labour payroll,
- The average earnings per man,
- Summary of bonuses earned,
- Number of lates and absences by departments,
- Percentage of standard production by departments,
- Percentage of standard labour cost by departments.

These statistics will, of course, need to be used with intelligence; the causes of variation should in all cases be ascertained before judgment is passed upon them.

The importance of determining fair rates of pay is very necessary. It is probably safe to say that there is no business organization that is capable of introducing real statistical control, which cannot at the same time secure the lowest cost per unit of output, by paying distinctly more than a market wage. A relatively small wage differential, combined with good general working conditions, will soon attract a group of employees who have the instincts of workmanship and co-operation. But this is only the beginning. Such selected employees will respond very quickly to good leadership and good management, but they may do even worse and show more resentment than a miscellaneous group if management and leadership are poor. The potentialities will be there, but they can be realized only through skilled and intelligently directed administration in which statistical control must play a large part.

Cost of Labour Turnover.

In the administration of labour, no subject is more important than labour turnover; it is in some measure the gauge of success and will often constitute the principal variable in the cost of labour itself. Wherever

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labour policy is a considerable factor, therefore, it is desirable to keep some record of the cost of labour turnover as well as of the extent of it. Statistics should be kept covering the number of men employed by the company from time to time, the number taken on, transfers, resignations, discharges for cause and laid off for want of work.

Parallel to these statistical records, a statement in dollars and cents of the cost of labour turnover will be serviceable. This account should include premiums or fees paid to employment agencies, advertising for help, cost of training, excess labour cost incurred by the new employee while his output is below normal, idle time or machines standing idle pending the hiring of operators, cost of spoiled work due to inexperience.

Study should also be made as to the possibility of guarantee of continuity of employment to deserving employees of any given minimum length of service. These studies will involve related investigations of the possibility of manufacturing for stock and increasing sales activities during periods of business depression. Following such investigation will come studies of possible sick benefit, death benefit, pension plans, dismissal wages and saving plan and bonus distribution. All of the foregoing plans may have their proper place in the development of a sound working organization and all will require accurate and properly analyzed records.

Established Policy Necessary.

Back of these immediate and constructive uses of statistical control in wage and labour matters lies an even larger protective function. No plans for the securing of high productivity through the establishment of a proper working morale can be successful unless they represent a firmly established policy. Not only must each change be introduced gradually, but it must also be made secure through continuing statistical evidence; otherwise temporary and wasteful attempts at economy may destroy in a few days the gains that have been made in a month or years.

When it comes to the details of statistical studies bearing on labour and wage problems, the range is so wide that it is hardly possible to do more than list a few of the more important angles of approach.

Critical examination must be given, in the beginning, to cost accounting systems. If these involve rigid apportionment of overhead expense and lack of statistical flexibility, they may seriously obscure the results obtained from efforts to secure increased productivity through wage increases and improved working morale.

Any successful programme must be based upon a policy of gradual development, with the closest co-operation between statistical and administrative forces. Each subordinate executive must feel that he is directing, and to a large degree is planning, his own statistics. The most fatal of all steps is to attempt to impose statistical control as a super-management over a skeptical and unwilling organization.

Beyond this initial requirement, there is the need for a continuing practical touch in every angle of the statistical work. The actual reports and analyses will vary in type from business to business and from month to month in any given business, but the basis for all internal statistics must be accurate and properly filed records of current and prospective

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activities. It is much more important to know just where and how fundamental information may be obtained, when needed, than it is to multiply routine reports and compilations.

Conclusion.

Because of the complexity of modern business, it is practically impossible for the management or an executive of a large corporation to rely upon personal observations and impressions when formulating plans and policies. To do so would lead to frequent errors and lastly mistakes of judgment. The human mind cannot adequately grasp the significance of a multitude of facts in the variety of their occurrence.

We are in an era of keen competition in business, and factual information is essential to success. Many firms would be in a much better position to-day if statistics had been employed by the men at the helm—if warning signals had been set, recognized and heeded.

Statistics and cost accounting are fundamental to the intelligent conduct of any business.

ILLUSTRATIONS OF THE USES OF STATISTICS

A building supply company in negotiating for its yearly contract for cement was quoted an increased price by a salesman who stated that the supply of cement was low and urged that a quick purchase be made before a shortage developed with spring building operations. By studying the business statistics as presented in the survey of current business, the purchasing agent of this company discovered that cement stocks were considerably higher than the year before, and that prices seemed to be on the decline. He, furthermore, ascertained that with a surplus of idle cars as against a shortage the year before, the railroads could easily deliver his goods promptly should he suddenly require a larger supply later on. These facts enabled the company to save 30c a barrel on a large order of cement through its study of statistics.

One well known company in the metal and machinery group watches particularly the statistics of agriculture, building construction, automobiles, railroads and exports, in order to see how the consumption of steel may be affected, while prices, wages and living costs are watched as bearing on wage questions.

A manufacturer of steel sheet products compares his new orders with those of allied industries to find out and improve his weak points.

The fabricator of structural steel watches the figures of building construction and the trends of the various industries to ascertain their prospects for expansion, which has meant larger sales of structural steel.

A manufacturer of steel barrels uses the Monthly Steel Barrel Statistics as publicity material in his monthly price bulletin to companies using steel containers for shipment or storage. This manufacturer also determines regularly the proportion of the total business that he is getting, as well as the proportion in each territory, so that weak spots in the sales organization can be picked out.

Another firm in this line compares its productive capacity with that of the industry as a whole, and it has found that its business is becoming more stabilized each year.

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Statistics of the iron and steel industry are also extensively used by another firm in planning its sales programmes, and in checking up on the results.

A maker of oiling devices uses building construction and automobile production as barometers with which to compare his business.

A company manufacturing tools and hardware finds that the curve of its sales is preceded by construction figures three months ahead, by speculation nine to twelve months ahead, and by money rates inverted twelve to fifteen months ahead.

A manufacturer of centrifugal pumping machinery finds that the curve of his business lags about six months behind the curve of building construction, and he estimates building programmes in advance from indicators of the activities of the various industries.

A firm making electrical switches charts the figures in both residential and industrial building contracts each month, using monthly figures, and also a three months' moving average from which it can anticipate the trend of demand for switches for both classes of buildings.

The number of machines made in each industry is used by a bearing manufacturer as indicating maximum sales possibilities, and his own sales are charted against the total for the industry to show the efficiency of his organization.

Study of the proportion of the individual business to the machine tool industry as a whole led two managers in this field to determine the cause for the reduction of their proportionate share of the total business although gaining in actual value. This study led in one case to a reconstruction of the designing department and in the other to a reconstruction of the selling department, these being the respective weak points in the organizations.

Other manufacturers in the same line found from figures of stocks, shipments, etc., that they had locked up a larger amount of capital per unit sold than had their competitors as a group. This led to revamping their production system, installing better methods of process and inventory control, and the liquidation of stocks resulting in the accumulation of interest bearing investments.

The sales manager of a machine tool company uses trade statistics to concentrate his efforts in the prosperous centres, and a distribution of the business statistics throughout the sales department has been found to produce new confidence in the business.

A firm dealing in household enamelware compares its own volume of business with general indexes such as sales of department stores, hardware stores, mail order houses and chain stores, while data on wholesale prices and the imports and exports are also used in evaluating the condition of business.

Production statistics have been used by manufacturers in the following ways:

1. In comparing present production with previous months or with monthly averages of previous years, the trend of production is discerned for the industry, and it is studied for evidences of a change in direction.

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2. The normal seasonal movement of the industry averaged over a series of years is often plotted on a chart and the current year's output plotted against it. Shows trend from normal.

3. The percentage which the production of one's particular firm forms of the total for the industry shows at a glance the firm's position in the industry, and any change in that ratio will show where the firm is gaining or losing in proportion to the rest of the industry.

4. When production figures are available over a period of years, the normal growth of the industry can be ascertained. This growth trend can be used to calculate future possibilities in the industry. Any firm can figure what its production will be several years hence provided it maintains its proportionate share in the industry and the trend of the industry is not altered. Thus it can make plans in advance for such expansion as may be necessary.

5. Comparison of the production figures with those of competing lines will show which are forging ahead in the race for popular favour. The more swiftly advancing line will be encouraged to develop its resources while the slower lines will need further efforts to hold their share of the business or will require changes of production or merchandising policies.

6. Production statistics are also used to measure the effect over a period of time of such influences as co-operative advertising. A case in point is their use by the paint manufacturers as a measure of the success of the "Save the Surface" campaign a few years ago. Similarly, the effects of tariff changes, price changes, particular legislation relating to the commodity, etc., are shown by comparing the period before the change with that after it, provided seasonal influences are allowed for. No great changes in general business have vitiated the comparisons.

7. Except where stocks are being accumulated or depleted to a large extent, production indicates the magnitude of shipments to be made in the near future. Similarly, production reports indicate prospective employment conditions owing to the general practice of producing as much as possible with present forces before hiring new employees.

Capacity figures are closely related to production for they measure the possibilities of production. The management of every plant should know its capacity based on a uniform definition for its particular industry. In this manner proper comparisons between its efficiency and that of the remainder of the industry can be made. These figures have been used as follows:

1. The relation between production and capacity at any given time indicates the extent to which production can still be increased without resorting to plant expansion. An individual firm may be working its plant at capacity and may be desirous of expanding, but, if the industry as a whole were shown by statistics to be busy at only a fraction of its capacity, individual expansion might not be warranted.

2. The capacity figures are used to clarify production statistics by showing the relationship of present to possible production.

3. Capacity is related not only to actual production but to the demand for an industry's products. Production may be near capacity, but demand

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may be either at about the same level as production, in which case any increase in capacity may not be warranted, or demand may be greater than capacity because of supplies being obtained from other sources. In this latter case expansion might be advisable. On the other hand, demand as shown by consumption of the commodities by consuming industries might be far below capacity, and this would indicate to the manufacturers of the products that the high cost plants had better be scrapped or put to other uses, since they would have no chance to operate except under the most favourable conditions.

4. Relationship to capacity is used extensively by trade associations and by their members to compare production statistics for two different periods when a varying number of firms report. If twenty manufacturers report one month and only fifteen the next month, with some of the fifteen firms not reporting among the twenty in the previous month, and thus precluding a comparison based upon identical concerns, a comparison of the total production in each month would mean little. The reported totals might show a decline whereas the actual conditions might be the reverse. By obtaining the total capacity of all reporting firms each month, a percentage relationship of production to capacity is established for correct comparison of the trend of productive operations.

The employment of labour is carefully considered by business men, for it must be large enough to produce or handle the goods properly, and small enough to leave a margin of operating profits. Wages form one of the heaviest items of expense in most lines of business and thus their proper regulation is essential to business success.

Employment is usually indicated either by the number of persons employed at a certain pay roll date in the month, or, where more detail can be given, by the number of man hours representing the total time of employment of all wage earners during the period.

The general trend of employment in an industry shows whether it is taking on or laying off workers, and particularly whether employment trends are following production trends, as is normally the case. Seasonal conditions should, of course, be allowed for.

The seasonal variation of employment in a particular plant is compared with the entire industry by reducing each month's employment to a percentage of the year's employment. It may be found that the particular firm's employment is at too great a peak at certain seasons and too low at others, thus resulting in too great a labour turnover and capital investment.

While production figures measure plant activity, statistics of shipments show the disposition of the products, since goods shipped from the plant are on the way to consumers, whether for use in further manufacture, in storage, or in wholesale or retail distribution. As consumption is usually fairly regular, shipments in most industries are more regular, month by month, than production, which may often outrun demand for a short period, and then have to recede until demand catches up. Large and regular shipments are desired by managements, since in this manner goods

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are billed and payment can be received, while stocks are kept down. Data on shipments presents the following uses:

1. Shipments indicate the consumption of a product better than production because they are nearer to the consumers, and they disregard production for stock. The shipment data are therefore studied as showing the consumption power of the country for the product in question, particularly in comparison with previous periods.
2. Shipment data are also used to determine the seasonal variation in consumption, thus permitting the intelligent regulation of production to synchronise with consumption.
3. Comparison of shipments with production shows whether the industry concerned is producing more or less than consumers' requirements, according as production is greater or less than shipments.
4. When shipments are presented by province or districts of destination, the manufacturer can see where the industry is shipping its goods.
5. Comparing the shipments by districts gives an indication of the relative importance of each district, as far as consumption of the particular product is concerned. The more important districts, thus revealed, are usually made the basis of the most intensive sales campaigns.
6. Manufacturers and distributors have used these shipments figures by districts to compare with their own figures to ascertain what proportion they are obtaining of the business of their own districts in which they are most favourably situated, and to what extent it might be advisable to concentrate more on those districts.
7. Comparison of production figures on various items with the relative distribution of those items, as shown by shipments, indicates to which items manufacturers may devote their attention as under-supplied.

A manufacturing plant, or a dealer, purchasing for resale does not want to tie up any more money than is necessary in carrying stocks of raw materials, and yet enough must be carried to insure continuous operation of the plant or sales agency. This adjustment of stocks has been obtained by many business men through the following uses of these statistics:

1. Figures of manufacturers' stocks of materials indicates the extent to which an industry is supplied with its raw material. This data, taken in connection with figures on unshipped orders, gives an idea as to whether there is likely to be a large demand from this industry for materials in the near future. Such a demand would be likely to bid up prices, while large stocks on hand would mean that manufacturers would be out of the market for some time.
2. Where consumption figures are available, the amount of material stock divided by the average daily consumption by the industry indicates the number of days' supply of materials on hand. Any changing practices in purchasing, such as the adoption of "hand-to-mouth" buying, can be shown by a comparison of these data over a long period, while the stock figures alone might not give this indication, owing to the gradual growth of stocks to take care of the increased production of the industry.
3. Any manufacturer may compare his average day's supply of ma-

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terial stock with the average for the industry and see whether his policies in this regard are conservative. He can also by this method of comparison over a period of time check up on whether he has done better or worse than the rest of the industry in stocking up in the past in anticipation of price increases.

4. Material stock may often have an influence on the output of the manufactured product. For instance, production may be increased at times beyond the proper demand merely to work off large material stock while production costs are cheap and to replenish the manufacturer's supply of materials at the low prices induced by the large outstanding supplies. In this case the addition of low cost goods may compensate the manufacturer for the additional storage of his finished products, especially if he believes demand will increase later and he desires to keep his force fully employed.

While material stocks held by manufacturers are largely under their control, being increased through purchases and decreased through production into finished goods, finished stocks cannot be decreased at will, as this depends upon shipments resulting from sales. Too large stocks are feared not only because of the extra carrying charges and tied-up capital, but also because of the possibility of losses through price slumps, while too small stocks, on the other hand, will prevent the manufacturer or dealer from giving the service which customers require and will thus result in loss of both sales and good will.

Stocks divided by average shipments will show the average time in months required to work off present stocks at the normal rate of consumption and in this form can be more readily compared with data for previous years for industries in which there has been a greatly enlarged production such as the petroleum industry.

As in the case of material statistics, the data on finished stocks for the industry as a whole, when divided by shipments, are used by individual manufacturers for comparison with their own averages. In this way each manufacturer can tell whether he is overstocking as compared with the rest of the industry, or understocking.

Statistics of orders accepted during the week or month have helped business firms to regulate their policies better through the following uses:

1. As production must precede shipments, and thereby the production curve in a measure forecasts the shipments of finished goods into consumption, so the receipt of orders anticipates and, in a measure, forecasts the output of goods.

2. Orders accepted are probably the best business barometer now in use because they reflect business sentiment exactly.

3. Figures on orders accepted are particularly useful in foreseeing times of crisis. Unshipped orders may be high, owing to a large accumulation of old orders, and stocks low, a normally good condition; but the first decline in accepted orders may be the signal for a depression. Stocks would thus increase on account of the cancellation of orders.

4. Comparison of the individual firm's orders with those of the industry will show immediately whether it is obtaining its proper share of

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the business, based on output in the previous year or an average of earlier years.

5. Accepted orders for an industry can be compared with production and shipments to ascertain whether demand is above or below productive activity or consumption deliveries.

6. The distribution of accepted orders by districts helps to check up on the activities of salesmen.

7. Where accepted orders are given by grades or sizes, it is also possible to foresee changes in demand or style before goods get into production, thus enabling the manufacturer to concentrate on the lines which are found to be most popular throughout the entire industry.

Price data are available on practically every line, since every trade usually has some place where its quotations are listed, whether it be an exchange, a trade association, or a trade paper.

Any firm can compare its own prices with the regular market to see if it is getting the general average for the industry. If competitors, or competing industries, are regularly under-bidding a firm, the price differential should be the signal to examine costs, so that prices may be quoted at the same level as those of competitors.

Import figures can be obtained on practically all commodities through the official figures of the Department of Trade and Commerce. Import figures are used by manufacturers as follows.

1. Imports show the competition in a particular line and which countries are gaining and which losing in their efforts to secure a foothold in our market.

2. Imports compared with domestic shipments of the industry show the exact proportion of a product supplied from domestic sources and from outside the country.

3. Imports of competing articles can be ascertained and their progress viewed in competition with the Canadian trade.

4. Imports of raw materials show the extent to which raw material supplies will be plentiful and give an indication of price trends if the imported quantities are a large enough proportion of the total supply.

Besides knowing the situation in his own industry, the manufacturer needs to know conditions in the industries from which he obtains his materials. When depression comes along, almost all industries topple like a house of cards. One's own industry may seem secure, just as a ship at sea on a calm day, but squall or hurricane will not find it unprepared if it has weather reports indicating their approach.

Cost System for a Laundry

A Thesis Submitted in Connection with the Society's Examinations

By SYDNEY ROSEMAN

Montreal Chapter

THE "X" LAUNDRY COMPANY

The three most important functions of laundering are:

COST SYSTEM FOR A LAUNDRY

1. Washing,
2. Drying.
3. Ironing.

Washing.

The process of washing includes the following functions: (a) Soaking, (b) washing hot water, (c) washing (steam), (d) starching, (e) blueing, (f) rinsing.

All this work is performed while the goods are in the washing machine.

The washing machine consists of a horizontal, outer, cylindrical drum in which revolves an inner cylindrical cage. This inner cage is perforated to allow free passage of water, and is divided into compartments of various sizes, thus offering a means for sorting the wash as required.

The inside cylinder is made of wood and brass, and the outside case of wood, galvanized iron or brass. The machine is equipped with pipes supplying cold and hot water and high pressure steam. By the use of easily regulated steam cocks, the correct temperature is almost instantly obtainable. Large inflow and outlet pipes allow for rapid filling and drainage.

The wash is placed in the various compartments of the inner cage, which is then shut tight. Water, hot or cold, is let into the outer drum, to which is added a soapy liquid, water softener, starch, etc.—all at the proper interval of time. The side of the outer drum is then closed, and by automatic reversing devices the inside cylinder revolves several times in one direction; then an equal number in the opposite one. This action loosens up the wash and subjects them freely to the action of water and soap, and so removes the dirt from the garments by the action of soap and water being forced through the fabrics.

WASHER

Drying or Extracting.

The wash is removed from the machines and placed in what is known as a centrifugal extractor. This machine consists of a perforated copper basket, revolving rapidly inside a steel or copper curl or case, and making from 800 to 1,400 revolutions per minute. The water is thrown out through the perforations in the basket by centrifugal force, and in about 20 minutes the goods are partially dried and ready to be removed. (The drying process is completed in subsequent departments.) There are eight machines of various sizes.

EXTRACTORS

Ironing.

This process is broken up into the following operations:

(a) Mangle Ironing—for flat work—

The ironing and drying of flat pieces such as sheets, aprons etc., is done by a machine known as the mangle. This is a huge machine consisting of a combination of revolving covered (padded) drums, coming in contact with revolving heated rolls, the goods being ironed and dried as they pass through from the "feeding end" of the machine to the "receiving end." The covered drums are wound with layers of felt, cotton, flannel

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and muslin, forming a compact padding. The heated rolls are highly polished and are heated by steam.

GENERAL VIEW

(b) Press Machine Ironing—for hard stock—

This is the ordinary flat steam press machine in general use to-day. The machine is worked by hand and foot. There are nine such machines arranged in groups of three each. One girl operates a group.

A piece of wash is placed on the ironing board; the top is closed down, locked (by foot) and steam released. Waiting for the goods to dry and press, the girl feeds her second machine and then her third. While feeding the third machine, she presses a lever (of the third machine) which releases the top of the first machine and so on. By this method, she is enabled to feed three machines and allow each the proper time to do its work.

PRESS MACHINE

(c) Rough Dry Tumbler—for rough dry work—

This machine only dries the rough dry work (massage, bath towels, etc.) which require no ironing. The machine consists of a vertical, revolving, circular wire cage—enclosed in a large metal box. The goods are placed into the cage and the lid shut.

An electric motor revolves the cage and at the same time operates a fan which forces hot air up through the box. (The hot air comes from the boiler room department.) The revolving cage "tumbles" the wash, which is dried by the hot air driven up from the bottom.

TUMBLER

Chapter II.

General Plant Routine.

The "X" Laundry Co. is a plant specializing in the laundering of work brought in by suppliers servicing small hotels, offices, chain stores, factories, and barber shops. Theirs is a weekly or bi-weekly service and their stock requires laundering once or twice a week. They bring to the laundry and call for all their wash.

The routine which is followed throughout the plant is based on the system of "first in first out." To keep this plan in operation, a daily schedule of work is kept. In each department, on a small blackboard is written the customer's number and the "Plant route No." given his particular lot for the day. This information is posted every morning by the general foreman.

Sorting and Classifying.

This department is centred in the receiving room. Each customer is assigned a number—which he retains throughout the time he uses the laundry. A customer's complete load is first weighed, and the weight, together with "Plant Route No." is recorded on a standard sized laundry tag stamped with the client's number.

The complete lot is then thrown into one of three spacious floor bins, to which is affixed its (that lot's) particular laundry tag.

COST SYSTEM FOR A LAUNDRY

Three walls of the receiving room are divided into small elevated bins. The bins are grouped into three sections (classes):

1. Flat work,
2. Hard stock,
3. Rough dry.

A bin is provided for each item listed under each group. (See receiving order following.)

In the centre of the room is a large semi-circular trough. Into this trough the sorter empties the first load received, detaching the tag from the bin and attaching it to the trough. He sorts the entire lot by tossing the various pieces into the nearby elevated bins—which are within easy reach.

Small wooden box trucks are used for inter-departmental conveyance. Printed laundry tags are available for each one of the three classifications of stock mentioned. The sorter stamps one tag of each class with customer's number and "Plant Route No." He then attaches each tag to a box truck.

Counting the number of pieces in each bin, he records same on receiving order—and tosses the wash into its particular truck. The receiving order is made out in triplicate—

Original—forwarded to accounting dept. (cost).

Second copy—forwarded to general foreman.

Third copy—remains in receiving room.

A despatcher conveys the three trucks to the washing department. The attached tags will serve to identify the wash up to the time it leaves the laundry.

"X" LAUNDRY CO.

Order No.	Receiving Order	Customer's No.
Name		Date Rec'd
Address		Route No.
		Total Weight

Quan.	Flat Work	Quan.	Hard Stock	Quan.	Rough Dry
	Barber Towels		Long Coats		Massage Towels
	Office Towels		Short Coats		Bath Towels
	Roller Towels		Overalls		Turkish Towels
	Dish Towels		Comb. Overalls		Face Towels
	Glass Towels		Hoovers		Bath Mats
	Napkins		Smocks		
	Long Aprons				
	Half Aprons				
	Bed Sheets				
	Barber Sheets				
	Mattress Covers				
	Double Sheets				
	Table Cloths				

Checked by

COST AND MANAGEMENT

Washing.

As the loads arrive they are placed into the washing machines — according to their respective "Plant Route No.". Each truck is emptied into a compartment, the tag being detached from the truck and attached to the hook fixed onto the outer drum—one hook for each compartment. The completed wash is then thrown back into the box trucks, each tag being re-attached to its particular box truck. The despatcher then removes the completed trucks to the extracting department.

Extracting.

The same routine is followed here as in the washing department—each tag being attached to the machine comprising its load. The extracting machines are of various sizes, making it quite simple to do one lot in one extractor. From this department all trucks are despatched, by elevator, to the three ironing and drying departments.

On the top floor, the despatcher distributes his trucks—each to its proper department—as follows:

Tags printed "Flat"—to mangle room department.

Tags printed "Hard"—to press machine department.

Tags printed "Rough"—to rough tumbler department.

Press Machine Ironing.

Each operator takes one truck at a time: In order to keep the "schedule of work" in proper order, two operators will share one truck containing a heavy load. As each piece is completed, the garments are placed on a table of which there is one to each operator. The folding of these garments is completed by one girl who folds the work on each operator's table separately. As the operator finishes her truck, she places the tag for that lot on top of the finished work on her table. This signifies that the lot is completed.

The girl removes the entire lot to a small wrapping table. There she counts and records the various pieces in duplicate in a bound book. This form may be termed a "Departmental Production Control" sheet:

"X" Laundry Co.	No.
	Date

PRESS MACHINE DEPT.

Production Sheet

Customer's No.

Quantity

Hard Stock

Long Coats
Short Coats.
Overalls.
Combination Overalls.
Hoovers
Smocks.

The checked work she packs in a medium-sized cardboard box, which are stored flat under the table, and seals the box with gummed paper. The

COST SYSTEM FOR A LAUNDRY

perforated edge of the production sheet, together with the string of the laundry tag, are sealed under the gum paper. The completed box is then immediately despatched (in box trucks) to the assembly and wrapping department.

Tumbler Dept. (Rough Dry).

Here the operator of the "tumbler" empties the complete lot of one truck into the machine. The tag is detached from the truck and tied to the machine. When the "rough dry" is taken from the tumbler, the identifying tag is removed from the machine, and the rough dry work thrown on a nearby table. The tumbler is refilled with another lot.

The operator arranges the rough dry, counts the number of pieces of each kind, records same in duplicate, and ties the completed bundle with a string. (This form of production sheet is similar to that of press machine department with the exception that it accounts for the rough dry class.) He attaches the original production sheet together with the tag to the bundle which he delivers to the assembly and wrapping department. There the rough dry is eventually wrapped with the flat work of that particular lot.

Mangle Ironing.

Box trucks bearing tags marked "flat work" arrive at the "shaking and feeding" end of the mangle machine. The "shakers" work on one customer's lot at a time. The lot is dumped into the "shaker." This "shaker" is a long, elevated, rectangular trough. Three "shakers" who stand near the trough shake and arrange the wash into like groups which they place on the "feeding table." This table is a pipe rack on which is placed two long rectangular boards—which can be moved back and forth. By this method one customer's lot of flat work is sorted on one board, which is then pushed over towards the "feeders" while the empty board is brought back to the "shakers" to be filled with another lot. The tag identifying the lot is wrapped in a piece of tarpaulin and placed on top of the finished lot it represents.

(Feeding end.)

Feeders.

The two feeders begin a new lot by sending its tag, wrapped in tarpaulin, through the mangle. This wrapped tag is called a "pilot" and serves the purpose of showing to the "receivers" the arrival of a new lot. The "feeders" singly feed the machine first with all small pieces, and then together with all large pieces, such as sheets, etc.

Receivers.

Upon the arrival of the "pilot" the receivers clear the "receiving shelf" of all accumulated ironed wash.

Two "receivers" each pick the ironed wash off the conveyor and fold them into like groups on the "receiving shelf." The larger pieces are handled by them together. As the pile of ironed laundry accumulates on the "receiving shelf" it is transferred into the various compartments of a nearby rack. This is a revolving rack at the receiving end of the flat work mangle. When the lot is completed, the tag is attached to the side of the

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rack, the rack is revolved, thus bringing up a set of empty compartments for the next lot. The first lot is then facing the wrapping tables. (Receiving end.)

REVOLVING RACK

Assembly and Wrapping.

The "Schedule of Work" posted on the blackboard in this department shows whether each customer's lot contains all three classifications of wash. This method prevents confusion in assembling each customer's entire load.

Customer's No.	Plant Route No.	Flat	Hard	Rough
52	10	v	v	v
73	11	v		v
47	12	v	v	

The number of the various pieces in the lot of flat work is counted and recorded in duplicate on a flat work production sheet. The original "flat work" copy, together with those of the "rough dry (tumbler)" and "hard stock (press machine)" departments are sent to the office of the general foreman. The flat work is then wrapped with the rough dry of that particular lot. The completely wrapped packages, and boxes, all bearing their original laundry tags, are placed in a box truck and despatched down to the receiving room "via" the general foreman's office.

Duties of General Foreman.

1. Supervision of the entire plant.
2. "Posts" schedule of work on each of the blackboards in each department. This information he obtains from his copies of receiving orders.
3. Checks the receiving order against the three production sheets (of that particular load) from the following departments—
 - (a) Wrapping and assembly (mangle department)—Flat work.
 - (b) Press machine ironing department—Hard stock.
 - (c) Tumbler department—Rough dry.
4. O.K.'s receiving order, which is sent together with its particular truck down to the receiving room—where customers are usually waiting for their wash. There the verified receiving order serves the purpose of a "shipping memo" to the customer.
5. Sends the three verified production sheets down to the accounting department (cost).

Chapter III.

COST SYSTEM

1. Service	Boiler room	None
2. Productive	Sorting and classifying	Flat-Hard-Rough
3. Productive	Washing	Flat-Hard-Rough
4. Productive	Extracting	Flat-Hard-Rough
5. Productive	Mangle Iron	Flat only
6. Productive	Press iron	Hard only
7. Productive	Tumbler	Rough only
8. Productive	Assembly and wrapping	Flat-Hard-Rough

COST SYSTEM FOR A LAUNDRY

Because of the various sizes and kinds of wash handled, the "weighted average method" is used in the distribution of costs. As the entire cost system depends upon the accuracy of the cost relations between the various units, great care is taken in their computation. The method was that of ascertaining the cost of running lots of 50 units each, of each kind of wash, through the entire plant, as follows:

- (a) A separate job cost sheet was kept for each lot.
- (b) Materials, labor, water and power were charged direct to each lot.
- (c) A predetermined fixed percentage of approximately 51% of the total direct charges was added to cover plant overhead.

This 51% for plant overhead was determined from the ordinary book-keeping system used by the company and from the past three years laundering statements prepared from this system. As the charges for materials, labor, power and water were set up as separate items of the laundering costs, the aforementioned percentage was therefore arrived at as a three-year average.

The resultant job costs obtained for the odd twenty-five units of wash were then compared on a "unit" cost basis. It was found that there were several kinds of wash which were processed at similar unit costs. From this it was possible to establish only seven different unit costs: \$.0050, \$.02, \$.0550, \$.0750, \$.10, \$.1250, \$.15.

The purpose of the weighted average system is to express cost ratios in terms of "points" for subsequent division of laundering costs. Therefore, using \$.0050 as a base, we obtain the following ratio which may be expressed in "points" or "marks," etc.:

1, 4, 11, 15, 20, 25, 30.

Therefore, from the above we can classify each kind of wash under the figure representative of its proportionate cost:

1 Point	4 Points	11 Points
Barber Towels	Face Towels	Bed Sheets
Office Towels	Bath Towels	
Roiler Towels	Turkish Towels	15 Points
Dish Towels	Long Aprons	Bed Spreads
Massage Towels	Square Aprons	Mattress Covers
Glass Towels	Table Cloths	Double Sheets
Napkins	Barber Sheets	Bath Mats
20 Points	25 Points	30 Points
Short Coats	Long Coats	Comb. Overalls
	Hoopers	
	Overalls	
	Smocks	

Production Records.

From the original receiving order (Form I), combined with the three additional departmental production sheets, the cost clerk records on the master production control sheet (Form 2):

- (a) Date and number of receiving order.
- (b) Total weight pounds receiving order (column for weight not shown on form).

COST AND MANAGEMENT

- (c) Number of pieces of each kind of wash.

The three departmental production sheets are stamped with the number of their respective receiving order and filed in this office for reference. They are filed in accordance with their respective receiving order numbers.

The original receiving order he passes on to the accounting office—to serve as a basis for an invoice.

The master production control sheet is totaled weekly. At the end of the fourth week, the accumulated totals, for each kind of wash, are transferred to the summary section of the sheet.

Then by multiplying the quantity of each kind of wash by its respective unit point value (as shown above) the cost clerk obtains:

- (a) Total "points" production of each class of wash.
- (b) Total "points" production of all classes of wash (combined).
- (c) A total "pound weight" column (not shown on the summary) records the total weight of the month's production.

Accounting for Materials.

The stock of materials carried is very small. The only department that requires any materials in its processing is the washing department. All wash room materials, paper and twine, and laundry tags are kept in a locked storeroom, adjoining the wash room and under supervision of the man in charge of the wash room. The following accounts are kept in the General Ledger:

Kind	Used in
Soap	Wash room department
Sodas	Wash room department
Starch	Wash room department
Wash room supplies	Wash room department
Paper and twine	Assembly and wrapping
Laundry tags	Sorting and classifying
Coal	Boiler room
Oil and grease	Distributed over several departments

The entries for charges to these accounts would come from Voucher Register (Form 3), or Consumption and Inventory sheet (Form 7).

Control of Materials.

To ascertain the amount of materials and supplies, etc., used, inventory is taken at the end of the accounting period. (Coal is kept in a huge bin near the boiler room.) Supplies on hand and unused in the sorting and wrapping departments are naturally included in the inventory.

The use of perpetual inventory records, by means of a materials and supplies ledger (i.e., stores ledger) as a means of control and check, and its entailing requisition slips and accounting procedure is not warranted, because:

1. The value of materials is not high.
2. The number of different kinds of materials is very small.
3. Materials are bulky, packed in barrels or casks.
4. Each class of materials or supplies is only suitable for its specific department.

COST SYSTEM FOR A LAUNDRY

5. The preparation of the inventory sheet is therefore a simple procedure.

Employee's Records.

A record of each employee in the plant is kept by means of a card system. The cards are kept on file in the cost office.

Employee's No.

"X" LAUNDRY CO.

Name	Date Discharged		
Address	Married		
Sex	Age		
Tel.	Date Employed		
References	Weekly Wage	Rate Hour	Work Assigned
			Wages Distribution

Name

Address

Name

Address

Interviewed by

All of the above information is filled in by the general foreman, with the exception of the "wages distribution," direct to one department or distributed over several—which is filled in by the general accountant.

Time Records.

Wages are paid on an hourly or weekly basis. To compute the number of hours worked, a six-day standard time recording clock is used. Each employee setting the "number pointer" of the machine opposite his number, punches his time of arrival and departure, morning, noon and night, thus recording his total time in the plant for the week.

Preparation and payment wages.

From the information contained in—

- (a) Six-day time recording sheet and consulting
- (b) Employees' record card (for rate hour, etc.) the cost clerk (or payroll clerk) prepares the following time card—one for each employee—

"X" LAUNDRY CO.		Time Card		
Name		Employee's No.		
Week Ending				
Day	Morning		Afternoon	Number of Hours
	In	Out	In	Out
Sun.				
Mon.				
Tues.				
Wed.				
Thur.				
Fri.				
Sat.				
Total Time				

COST AND MANAGEMENT

Time	Hrs. @	\$
Weekly Wage		\$
		Total Wages \$
Received Payment as above		

The time cards are prepared either on an hourly rate or weekly rate—as per notation on employee's record card.

The time cards are handed to the general foreman (or, e.g., plant superintendent), who distributes them to the various employees, who present their cards at a wicket of the accounting department (e.g., cashier's department), signing their cards at the time they receive their cash for them.

Accounting Wages (Labor).

Before distribution of the time cards, they are entered on the "weekly payroll and labor distribution sheet" (Form 4) by the cost clerk (or payroll clerk). From the time card he enters:

1. Number of hours worked, rate per hour, wages earned.
- or 2. only weekly wage.

He then delivers the time cards to the general foreman.

From the employees' record cards he charges each employee's wages to its specific department or distributes it over some or all departments, as indicated on the employees' record cards.

The payroll sheet is totaled, and additions checked: Sum of "wages earned" and "weekly wage"; sum of department totals (direct and indirect).

Payroll Book (Form 5).

The weekly payroll sheet (Form 4) is then entered into the payroll book (Form 5). Against each department is entered the total direct and indirect wages for the week. A payroll voucher is then prepared and entered in the voucher register (Form 3), as follows:

DR. Accrued Payroll	\$281.
CR. Accts. Payable	\$281.

The above procedure is followed at the end of every week. (The cheque against this payroll voucher would be entered in the cash book (standard form):

DR. Accts. Payable	\$281.
CR. Cash	\$281.

Indirect Labor.

By the use of columns provided (v), in the payroll book (Form 5), the indirect labor is posted into the plant overhead ledger (i.e., standing orders). The indirect labor for boiler room is posted under the code number representing "wages engineer," and that of the other departments under their code numbers representing "supervision and trucking."

Plant Expense (Overhead).

The preference of the term "plant expense" to that of "manufacturing expense" is obvious, in view of the fact that this is not a manufacturing company.

COST SYSTEM FOR A LAUNDRY

A "plant expense" control account is kept in the general ledger, which account controls a "plant expense" subsidiary ledger containing the accounts of the various "plant expenses"—classified by departments. These "plant expenses" are usually termed "standing orders." However, since the order numbers for these expenses are constant, the use of the term "standing orders" is preferable, in contrast to the changing numbers of the receiving orders or production orders (if any).

See codification "plant expenses," following:

Plant expenses accounts are coded as follows—

Department Numbers

1—Boiler Room.		2—Sorting and Classifying.
3—Wash Room.		4—Extracting.
5—Mangle.		6—Machine Press.
7—Tumbler.		8—Wrapping and Assembly.

Department Numbers

	1	2	3	4	5	6	7	8
Supervision & Trucking	B06	C06	D06	E06	F06	G06	H06	
Fuel	A01							
Supplies		B02						H02
Oil and Grease	A03		C03	D03	E03	F03	G03	
Belting			C04	D04				
Padding					E05	F05		
Wages Engineer	A05							
Idle Time "Break"	A07		C07	D07	E07	F07	G07	
Repairs Machinery	A08		C08	D08	E08	F08	G08	
Repairs Motors	A09		C09	D09	E09	F09	G09	
Repairs General	A10	B10	C10	D10	E10	F10	G10	H10
Taxes	A11	B11	C11	D11	E11	F11	G11	H11
Rent	A12	B12	C12	D12	E12	F12	G12	H12
Depreciation Equipment	A13		C13	D13	E13	F13	G13	
Depreciation Box Trucks		B14	C14	D14	E14	F14	G14	H14
Depreciation Fixtures		B15			E15	F15	G15	H15
Insurance, Fire		B16	C16	D16	E16	F16	G16	H16
Insurance, Boiler	A17							
Electrical Repairs	A18	B18	C18	D18	E18	F18	G18	H18
Lights	A19	B19	C19	D19	E19	F19	G19	H19
License, Motors	A20		C20	D20	E20	F20	G20	
Repairs, Fans	A21		C21		E21	F21	G21	
Boiler Rm., Power Used	A22							
Repairs Floors		B23	C23	D23	E23	F23	G23	H23
Miscellaneous Expenses	A24	B24	C24	D24	E24	F24	G24	H24
Apportioned Charges			C25		E25	F25	G25	

Sources Entries to Standing Orders.

There are four sources for these charges:

1. Cost memo (voucher payable), prepared at time invoice approved.
2. Cost memo (journal), prepared from the monthly "materials and supplies consumption sheet."

COST AND MANAGEMENT

3. Postings from payroll book.
4. Postings from schedule of fixed charges.

"X" LAUNDRY CO.	Cost Memo No.....
Charge	Date
A/c Code No.	
Kind Expense	
Voucher No.....	Journal Voucher No.....
	Signed.....

These standing orders may be divided into two classes:

1. Fixed charges.
2. Variable charges (expenses).

The reason for this classification is that some expenses always remain constant (i.e., fixed), whereas the others tend to vary with the volume of production:

Fixed Charges—Entered from schedules prepared (e.g., Form 8), e.g. rent, taxes, depreciation, license motors, fire insurance, etc.

Indirect Materials—Expense charges entered from cost memo (journal) e.g., oil and grease, supplies, fuel, etc.

Indirect Labor—Expense charges entered from payroll book (Form 5) e.g., wages—engineer, foreman, truckers.

General Expenses—From cost memo (journal or voucher payable) e.g., belting, repairs, idle time, etc.

Plant Equipment.

The plant equipment of machines and motors are numerous and of various kinds. It is, therefore, practicable to keep a plant equipment ledger—divided into two sections:

1. Assets (plant equipment).
2. Reserves (depreciation equipment).

Assets section—Controlled by plant equipment a/c in general ledger.

Reserves section—Controlled by reserve depreciation equipment a/c in general ledger.

Depreciation Equipment.

Depreciation is calculated on the practical "straight line" method, giving due consideration to the cost, scrap value and expected life of each machine or motor. There being no unused equipment in the plant, charges for depreciation are made from prepared schedules—a 13 "month" schedule is made for each piece of equipment, as per example:

Washing Dept.		Schedule Depreciation			
No. XYZ—326—A1. "CASCADE WASHER"		Dr.	Cr.		
		Standing Order	Reserve Acct.		
4th Week	Monthly				
Ending	Depreciation	Posting	Plant Ledger		
1	Jan. 10	4	C13	10X	

COST SYSTEM FOR A LAUNDRY

2	Feb. 7	4	C13	10X
3	Mar. 7	4	C13	10X
4		4	C13	10X

All prepared schedules for machinery, motors, rent, taxes, licenses, are contained in a ledger, in which all schedules are numbered consecutively. This ledger only serves the purpose of (a) systematic postings being made to the standing orders, and (b) the schedule of fixed charges is prepared from this ledger at the end of every accounting period.

"Miscellaneous" expenses which could not be charged direct to the departments were distributed as follows:

Kind Expense	Basis Distribution
Oil and grease	Number machines each department
Taxes	Area of floor space each department
Rent	Area of floor space each department
Indirect labor	Equally among all Depts.—except boiler room
Depreciation box trucks	Equally among all Depts.—except boiler room
Fire insurance	Arbitrary basis
License motors	Total H.P. of motors contained each Dept.
Power	Total H.P. of motors contained each Dept.

CLOSING ENTRIES

The voucher register is totaled, the "credits" to accounts payable being equal to the sum of total "debit" column. The total of each column is posted to its account in the general ledger.

Materials.

An "inventory and consumption sheet" is prepared as per Form 7. From this sheet the following journal entry is made:

Dr.: Soap used (in process)	\$460
Sodas used	200
Starch used	90
Washing supplies used	34
Plant expense control	386
Cr.: Soap	\$460
Sodas	200
Starch	90
Washing supplies	34
x Laundry tags	7
x Paper and twine	35
x Oil and grease	9
x Coal (fuel)	335

To record materials and supplies used.

x Posted to standing orders by means of cost memo.

Payroll Book.

Dr.: Sorting and classifying labor	\$60
Washing labor	80
Extracting labor	80
Mangle labor	180

COST AND MANAGEMENT

Press machine labor	200
Tumbler labor	80
Assembly and wrapping labor	100
Plant expense control	344
Cr. Accrued payroll	\$1124

Distribution of monthly payroll to production.

Power and Water.

These two items of expense considered in this thesis as "direct" charges are ascertained by means of meters. Meters are read, by the engineer, every four weeks, a record always being kept of the meter reading at the end of previous accounting period.

Power is distributed between the service department and five productive departments on a basis of the total H.P. of the motors in each department. All motors in every department being in use during the period.

The distribution of power is prepared on a schedule form, similar to those used for schedules of fixed charges. This schedule, in journal entry form, would be:

Dr.: x Plant expense control	\$17
Washing—power used	34
Extracting—power used	17
Mangle—power used	43
Press machine—power used	23
Tumbler—powre used	8
Cr: Accrued power	\$142

Distribution of power consumption to departments concerned.

x Charged standing orders—boiler room—by means cost memo.

Lighting is a small item of expense of this plant, there being a large roof-area of skylights—is therefore not considered.

Water: This item is charged direct to washing department (journal).

Dr.: Washing—Wated used \$184
Cr.: Accrued water \$184

To record water consumption for the month

Plant Expenses

Fixed charges: A summary is made of the ledger containing the schedules of all fixed charges. This summary gives us one schedule (for all) fixed charges, from which is constructed the following journal entry:

Dr.: Plant expense control	\$287
Cr.: Prepaid taxes	\$ 27
Prepaid rent	78
Reserve Depn. equipment	110
Reserve Depn. box trucks	7
Reserve Depn. fixtures	10
Prepaid fire insurance	25
Prepaid boiler insurance	10
Prepaid license motors	20

To record fixed charges for "month."

Standing orders of each department are ruled and totaled. The totals are transferred to the "summary section" of each standing order.

COST SYSTEM FOR A LAUNDRY

From this point we can prepare a "summary of standing orders" by departments.

From the summary of standing orders we construct a journal entry as follows:

Dr.: Boiler room expense	\$524
Sorting and classifying expense	70
Washing expense	133
Extracting expense	97
Mangle expense	137
Press machine expense	103
Tumbler expense	51
Assembly and wrapping expense	91
Cr.: Plant expense control	\$1206

To transfer total plant expense to departmental expense accounts.

Miscellaneous Notes.

Storeroom—Considered as part of washing department, and treated as such in distribution of rent, taxes, etc.

Press machine department—Area of "wrapping section" of this department, considered as part of wrapping and assembly department—labor (operators) charged one-sixth to wrapping and assembly department.

Tumbler department—Same treatment as for press machine department.

Heat—Is not considered as a factor of expense, this being obvious from the use of fans to draw out the heat.

Wash-in-process—There never is any uncompleted wash in the plant—if any, it must be cleared out at the end of the week. The suppliers (i.e., customers) require quick changes of their wash and therefore never leave any wash which could not be finished before the end of the week.

Distribution of Service Department.

The total expense for the boiler room is \$524. The services rendered by this department are steam and compressed air (hot). Therefore the practical basis of distribution would be number of "points" processed in each department receiving the services of the boiler room. The "points" basis is obtained from the "summary section" of the master production control sheet.

Washing department	— 700,000 "points" processed
Mangle department	— 400,000 "points" processed
Press machine Dept.	— 200,000 "points" processed
Tumbler department	— 100,000 "points" processed
<hr/>	
	1,400,000

The distribution would be prepared on a schedule form, which may be termed "boiler room distribution record." However, in order to save space, the following is the journal entry:

Dr.: Washing department expense	\$262
Mangle department expense	149
Press machine department expense	74
Tumbler department expense	39
Cr.: Boiler room expense	\$524

COST AND MANAGEMENT

To distribute boiler room expense to productive departments (charges entered on standing orders of productive departments and added to summary) by means of cost memo.

Cost Statements.

As all laundering costs have now been charged to the productive departments, a cost statement—by departments—which is supported by a "schedule of plant expense"—is now prepared.

From the above cost statement we can prepare a cost statement, showing total laundering costs, by classes of wash. This statement enables us to construct the following journal entry:

Dr.: Laundry cost—flat work	\$1647.20
Laundry cost—hard stock	969.20
Laundry cost—rough dry	462.60
Cr.: Washing—Soap used	\$460
Washing—Sodas used	200
Washing—wash used (supplies)	34
Sorting and classifying—labor	60
Washing—labor	80
Extracting—labor	80
Mangle—labor	180
Machine press—labor	200
Tumbler—labor	80
Assembly and wrapping—labor	100
Washing—water used	184
Washing—power used	34
Extracting—power used	17
Mangle—power used	43
Machine press—power used	23
Tumbler—power used	8
Sorting and classifying—expense	70
Washing—expense	395
Extracting—expense	97
Mangle—expense	286
Machine press—expense	177
Tumbler—expense	90
Assembly and wrapping—expense	91

To distribute and to close laundering costs accounts to classes of wash. All the above accounts are in the general ledger.

Sales.

Invoices are prepared from original receiving orders sent by the cost office. Invoice shows same division of wash into three classes—Flat—Hard—Rough.

The sales register shows the same division of the wash. Each invoice when entered in the sales register, is distributed as required. At the end of accounting period the totals of the sales register provide us with the journal entry:

Dr.: Accounts receivable Control

Cr.: Sales—Flat work

Sales—Hard stock

COST SYSTEM FOR A LAUNDRY

Sales—Rough dry

To record sales for the period.

Now, the concluding journal entry would be:

Dr.: Laundering account	\$3079
Cr.: Laundry cost—Flat	\$1647.20
Laundry cost—Hard	969.20
Laundry cost—Rough.	462.60

Dr.: Sales—Flat

Sales—Hard

Sales—Rough

Cr.: Laundering account

To close above accounts—to arrive at the "laundering profit"—which is transferred to "P. and L" and then "surplus."

Profit and Loss Statement.

STANDARD COSTS AND BUDGETS

The term "standard costs" as used in this thesis represent costs under ideal conditions. The use of the "standards" set up is to arrive at the "variations between actual costs and standard costs," thus making the standards serve as a "measure of actual performance."

Standard costs are, at best, only very carefully and accurately prepared estimates. The establishment of these standards may require a considerable length of time—depending upon the size of the concern involved, the method of determination, and the degree of accuracy desired. The method used is never the same in any industry. However, the ultimate aim is always the same—to arrive at standard costs sufficiently flexible so as to embody the controllable and uncontrollable cost factors in the plant.

Budgets.

Budgets are used primarily to control costs and eliminate waste. Only accurately prepared budgets—which require great care in their set-up and maintenance—will give proper results and benefits.

The budget prepared for the "X" Laundry Co.—six months after the installation of a cost system—was a "production budget" of the washing department—at standard costs. The choice of the washing department is obvious, based on the fact that approximately 50% of total laundering costs are incurred in this department.

The following is an example of some of the methods used in the preparation of the standard costs and the production budget.

1. The normal operating time in this department is 60 hours per week.
2. A 400-pound lot of mixed wash was put through the washroom, and time taken for completion was $1\frac{1}{2}$ hours.
3. The "standard" monthly production was therefore set at 64,000 pounds.
4. The "standard" rates per pound for materials (exclusive of starch), supplies, power, water, labor, was ascertained by means of a job cost sheet (for this 400-pound lot) and also by means of "time and motion study" records.

COST AND MANAGEMENT

5. Fixed charges and variable expenses taken—and modified—from past records.

The budget was set up for one month—to serve for a period of six months—after which a new and similar budget was to be prepared, if necessary. In all of the above computations, consideration was given to all outside factors which might tend to effect costs, such as increased wage rates, prices of materials, the purchase of new machinery, etc.

The reason why costs for starch was not included is because it is only used for the rough dry class of wash. Starching requires only addition of materials to the processing—no extra labor required.

Accounting.

This budget is not incorporated with the general cost records, but is kept as a statistical record, from which at the end of every month, a statement of "responsibility" is drawn up, showing variations from standards—for example:

1. Price differences.	Purchase agent.
2. Inferiority materials.	Purchase agent.
3. Quantity materials consumed.	Head of washing department.
4. Labor costs.	Head of washing department.

Statement of Variations (and responsibility).

This statement is drawn up showing variations between:

- (a) Actual production at standard costs.
- (b) Actual production at actual costs.

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